

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

ORDER No. R2-2002-0088
NPDES PERMIT NO. CA0038776

AMENDING WASTE DISCHARGE REQUIREMENTS FOR:

**CALERA CREEK WATER RECYCLING PLANT
CITY OF PACIFICA
SAN MATEO COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. The Board adopted waste discharge requirements for the City of Pacifica's Calera Creek Water Recycling Plant (Order No. 99-066) (hereinafter called the Discharger) on September 15, 1999, to discharge wastewater to the waters of the State and the United States through a shallow water outfall under the National Pollutant Discharge Elimination System (NPDES).
2. The City of Pacifica owns and operates the Calera Creek Water Recycling Plant (CCWRP), which provides tertiary treatment of domestic wastewater from the City of Pacifica. The treatment plant has a dry weather design capacity of 4.0 million gallons per day (MGD), and a peak hourly wet weather flow capacity of 20 MGD.
3. The treatment processes at the CCWRP consist of bar screenings, grit removal, sequencing batch reactors (SBRs) for secondary treatment and ammonia removal, filtration, and ultraviolet light disinfection. Treated effluent is discharged to a wetland restoration project along Calera Creek.
4. The effluent from the CCWRP is discharged via a cascade aerator structure into Calera Creek, a tributary of the Pacific Ocean. The portion of Calera Creek between the discharge structure and the Pacific Ocean is a restored wetland, with an intermittent drainage to the Pacific Ocean. Calera Creek empties into the Pacific Ocean approximately 0.52 miles downstream of the CCWRP discharge point. (see Attachment A) The coordinates of the discharge location are 37 deg. 36 min. 53 sec. north latitude, and 122 deg. 29 min. 16 sec. west longitude.
5. Although the Basin Plan does not specifically designate beneficial uses for Calera Creek, it states that inland surface waters such as Calera Creek support or could support most of the beneficial uses described in the Basin Plan. The specific beneficial uses for inland streams, according to the Basin Plan, include:
 - Municipal and Domestic Supply
 - Agricultural Supply
 - Industrial Process Supply
 - Groundwater Recharge

- Water Contact Recreation
 - Non-contact Water Recreation
 - Wildlife Habitat
 - Cold Freshwater Habitat
 - Warm Freshwater Habitat
 - Fish Migration
 - Fish Spawning
6. Effluent Limitation B.4 of the existing permit, Order No. 99-066, imposes a total coliform seven sample median limit of 2.2 MPN (most probable number) per 100 milliliters (MPN/100 ml), and a single sample maximum of 240 MPN/100ml.
7. The reopening and subsequent amendment of Order No. 99-066, is allowed by Section 13263(e) of the Porter-Cologne Water Quality Control Act, 1998, which states:
- “Upon application by any affected person, or on its own motion, the regional board may review and revise requirements. All requirements shall be reviewed periodically.”
8. *Scope of the Amendment.* The 1995 San Francisco Bay Basin Plan, Table 4-2, Effluent Limitations for Conventional Pollutants, footnote e, allows the Regional Board to establish alternate limits to the total coliform limits (as described in Finding 6) when it is demonstrated that the beneficial uses of the receiving water will not be compromised.
9. *Basis of the Amendment.* The most stringent water quality objectives from Table 3-1 of the Basin Plan should be applied to insure protection of all of the potential beneficial uses of Calera Creek as outlined in finding 5. The beneficial uses related to human health contact are the most sensitive beneficial uses to be considered when setting coliform limits. Accordingly a fecal coliform limit expressed as a five-sample geometric mean of 20 MPN/ 100 ml and a 10-sample 90th percentile of 400 MPN/100 ml will be protective of both the municipal supply and water contact recreation beneficial uses.
- Furthermore, the Discharger’s Bacteriological Study of Calera Creek, shows that for a majority of the samples collected, both the fecal coliform and enterococcus samples in the creek at the point of discharge from the treatment plant are lower than both their corresponding upstream and downstream samples (see Attachment B). This demonstrates that the discharge of the treated effluent from the plant is not having an adverse impact on the fecal or enterococcus quality of Calera Creek. The three Calera Creek sample locations are outlined in the map included as Attachment A. The Discharger will continue to monitor the bacteriological levels in Calera Creek to verify there is no adverse impacts associated with the fecal coliform limit, as a provision in this amendment.
10. The U.S. Fish and Wildlife Service (USFWS) has prohibited any discharge of chlorine or chlorinated compounds to the restored Calera Creek Wetlands. According to the USFWS, any chlorine that the Discharger adds to the treated effluent from the CCWRP would have detrimental impacts on the wildlife populations of the wetlands. The wetland is a habitat that supports Red-legged Frogs and San Francisco Garter Snakes, both of which are endangered species. Since the Discharger cannot use chlorine to clean the ultraviolet light disinfection basins, it is extremely difficult to control the occasional regrowth of low levels of non-fecal coliform (5 to 20 MPN/100 ml). The regrowth of non-fecal coliform has caused elevated measurements of total coliform in the effluent sample.

11. According to Implementation Guidance for Ambient Water Quality Criteria for Bacteria, U.S. Environmental Protection Agency, 1986, fecal coliform and enterococcus are better bacteriological indicators of sewage-related coliform. From October 2001 through July 2002, the Discharger conducted concurrent tests of total coliform, fecal coliform, and enterococcus for plant effluent. The results are shown in Attachment C. The results of this study demonstrate that a violation of the current total coliform seven-sample moving median effluent limit of 2.2 MPN/100 ml does not result in any measurable fecal coliform levels, as defined by the five-sample geometric mean (All of the 5-sample geometric mean values for fecal coliform are below the proposed limit of 20 MPN/100 ml.)
12. The above mentioned studies provide new information not available at the time the Discharger's permit was issued which justifies application of a different coliform limit. Therefore, the revised effluent limit does not violate the anti-backsliding provision of section 402(o)(2)(B)(i) of the Clean Water Act. The revised effluent limit will not result in any decrease in water quality, and therefore it is consistent with the State Board Resolution 68-16 (Anti-degradation Policy) and with the Federal Anti-degradation Rule (40 CFR 131.12).
13. *California Environmental Quality Act Compliance.* This amendment of waste discharge requirements is exempt from the environmental impact analysis provisions of the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.). (Water Code section 13389; California. Code of Regulations, Title 14, section 15263.)
14. The Dischargers and interested agencies and persons have been notified of the Board's intent to amend the requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations. The Board's responses to comments have been hereby incorporated by reference.
15. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. 99-066, is amended as described in the following items. To distinguish the original language contained in Order Nos. 99-066, from this Order, all the amendments are highlighted by dashed underline for additions and ~~striketrough~~ for deletions.

- I. Section B.4., Total Coliform Effluent Limits in Order No. 99-066, shall be amended to read as follows:

4. Total Fecal Coliform Bacteria

Dry Season: During calendar months May through October, the moving median value for the Most Probable Number (MPN) of total coliform bacteria in any seven consecutive effluent samples shall not exceed 2.2 MPN per 100 milliliters (2.2 MPN/100ml). Any single sample shall not exceed 240 MPN/100ml.

Wet Season Discharge to the Calera Creek Wetlands: During calendar months November through April, the moving median value for the Most Probable Number (MPN) of total coliform bacteria in any seven consecutive effluent samples shall not exceed 23 MPN per 100 milliliters (23 MPN/100ml). Any single sample shall not exceed 1,000 MPN/100ml during a wet weather day, as defined by daily rainfall greater than or equal to 0.1 inches. During a dry weather day, any single sample shall not exceed 240 MPN/100ml.

- a. The geometric mean value of the last five samples for fecal coliform density shall not exceed a Most Probable Number (MPN) of fecal coliform bacteria of 20 MPN/ 100 ml; and
- b. The 90th percentile value of the last ten samples shall not exceed a fecal coliform bacteria level of 400 MPN/ 100 ml.

II. An additional provision, E.19, shall be added:

19. Calera Creek Bacteriological Study

The Discharger shall continue the bacteriological quality of Calera Creek at upstream, at discharge, and downstream locations for total coliform, fecal coliform, and enterococcus at monthly intervals through March 2003. The Discharger shall submit the results of the Calera Creek bacteriological sampling from February 2002 to March 2003, acceptable to the Executive Officer, by April 30, 2003.

I, Loretta K. Barsamian, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on September 18, 2002.


LORETTA K. BARSAMIAN
Executive Officer

Attachment A: Facility Location Map

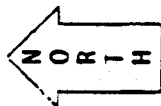
Attachment B: City of Pacifica Bacteriological Study of Calera Creek

Attachment C: City of Pacifica Bacteriological Study of Plant Effluent

TREATMENT PLANT

PLANT EFFLUENT
LOCATION

CITY OF PACIFICA CALERA CREEK
WATER RECYCLING PLANT



CREEK SAMPLE
AT DISCHARGE

DOWNSTREAM
SAMPLING POINT

CALERA CREEK

END OF WETLANDS
SAMPLING POINT
(AS PER PERMIT)

UPSTREAM
SAMPLING
POINT

CALERA CREEK RUNS
UNDERGROUND HERE

PACIFIC
OCEAN

SCALE: 1" = 390'

CALERA CREEK WATER RECYCLING PLANT
700 COAST HIGHWAY, PACIFICA, CA 94044

Attachment A: Facility Location Map

Bold = Lowest Fecal or Enterococcus Value (Upstream, at Discharge, or Downstream)

Note: Little to no flow upstream of discharge as of May 15, 2002 due to dry season

Attachment C:
City of Pacifica -
Bacteriological Study of Plant Effluent
Bold = current 2.2 seven-sample total coliform limit violation

October 2001

Date	Total coliform	Seven Sample Median - Total	Fecal Coliform	Geometric Mean of Last 5 Samples - Fecal	Enterococcus
1	<2		<2		<1.33
2	<2		<2		<1.33
3	46		46		29
4	<2		<2		<1.33
5	<2		<2	3.74	<1.33
8	<2		<2	2.00	<1.33
9	<2	2	<2	2.00	<1.33
10	<2	2	<2	2.00	<1.33
11	<2	2	<2	2.00	<1.33
12	5	2	<2	2.00	<1.33
15	7	2	<2	2.00	<1.33
16	8	2	8	3.17	<1.33
17	<2	2	<2	3.17	<1.33
18	<2	2	<2	2.83	<1.33
19	<2	2	<2	2.64	<1.33
22	5	5	<2	2.00	<1.33
23	<2	2	<2	2.00	<1.33
24	<2	2	<2	2.00	1.33
25	<2	2	<2	2.00	<1.33
26	<2	2	<2	2.00	4
29	<2	2	<2	2.00	<0.8
30	<2	2	<2	2.00	<0.8
31	8	2	2	2.00	<0.8

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November 2001

Date	Total coliform	Seven Sample Median - Total	Fecal Coliform	Geometric Mean of Last 5 Samples - Fecal	Enterococcus
1	<2	2	<2	2.00	<0.8
2	<2	2	<2	2.00	<0.8
5	<2	2	<2	2.00	<0.66
6	5	2	<2	2.00	<0.66
7	<2	2	<2	2.00	<0.66
8	<2	2	<2	2.00	<0.66
9	<2	2	<2	2.00	<0.66
12	<2	2	<2	2.00	<0.57
13	5	2	<2	2.00	1.14
14	<2	2	<2	2.00	<0.57
15	6	2	<2	2.00	<0.57
16	<2	2	<2	2.00	<0.57
19	<2	2	<2	2.00	<0.5
20	5	2	<2	2.00	<0.5
21	27	5	4	2.52	<0.5
22	7	5	2	2.38	<0.5
23	<2	5	<2	2.30	<0.5
26	5	5	<2	2.00	<1.0
27	<2	5	<2	2.00	28
28	5	5	<2	2.00	<1.0
29	240	5	33	4.03	44
30	8	5	<2	3.50	<1.0
31					

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December 2001

Date	Total coliform	Seven Sample Median - Total	Fecal Coliform	Geometric Mean of Last 5 Samples - Fecal	Enterococcus
1					
2					
3	109	5	13	5.09	58
4	2	5	<2	5.09	<1.0
5	2	5	<2	5.09	<1.0
6	13	8	<2	2.91	12
7	2	8	2	2.91	<1.0
10	8	8	2	2.00	<1.0
11	<2	2	<2	2.00	<1.0
12	2	2	2	2.00	<1.0
13	<2	2	<2	2.00	<1.0
14	<2	2	<2	2.00	<1.0
17	5	2	<2	2.00	<1.0
18	<2	2	<2	2.00	<1.0
19	<2	2	<2	2.00	<1.0
20	<2	2	<2	2.00	<1.0
21	2	2	2	2.00	16
24	2	2	2	2.00	<1.0
25	<2	2	<2	2.00	<1.0
26	<2	2	<2	2.00	<1.0
27	<2	2	<2	2.00	<1.0
28	2	2	<2	2.00	<1.0
31	<2	2	<2	2.00	<1.0

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January 2002

Date	Total coliform	Seven Sample Median - Total	Fecal Coliform	Geometric Mean of Last 5 Samples - Fecal	Enterococcus
1	<2	2	<2	2.00	<1.0
2	2	2	2	2.00	<1.0
3	<2	2	<2	2.00	1
4	9	2	5	2.40	<1.0
7	<2	2	<2	2.40	<1.0
8	<2	2	<2	2.40	<1.0
9	<2	2	<2	2.40	<1.0
10	<2	2	<2	2.40	<1.0
11	<2	2	<2	2.00	<1.0
14	<2	2	<2	2.00	<1.0
15	<2	2	<2	2.00	<1.0
16	4	2	<2	2.00	<1.0
17	<2	2	<2	2.00	<1.0
18	<2	2	<2	2.00	<1.0
21	2	2	<2	2.00	<1.0
22	2	2	<2	2.00	<1.0
23	<2	2	<2	2.00	<1.0
24	2	2	<2	2.00	<1.0
25	23	2	23	3.26	<1.0
28	<2	2	<2	3.26	<1.0
29	<2	2	<2	3.26	<1.0
30	<2	2	5	3.92	<1.0
31	23	2	23	6.38	5

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February 2002

Date	Total coliform	Seven Sample Median - Total	Fecal Coliform	Geometric Mean of Last 5 Samples - Fecal	Enterococcus
1	33	2	33	6.80	<1.0
4	<2.0	2	<2.0	6.80	<1.0
5	<2.0	2	<2.0	6.80	<1.0
6	2	2	<2.0	6.80	6
7	2	2	<2.0	3.50	<1.0
8	<2.0	2	<2.0	2.00	<1.0
11	<2.0	2	<2.0	2.00	<1.0
12	<2.0	2	<2.0	2.00	<1.0
13	2	2	<2.0	2.00	<1.0
14	<2.0	2	<2.0	2.00	<1.0
15	<2.0	2	<2.0	2.00	<1.0
18	<2.0	2	<2.0	2.00	<1.0
19	<2.0	2	<2.0	2.00	1.3
20	<2.0	2	<2.0	2.00	<1.0
21	<2.0	2	<2.0	2.00	<1.0
22	<2.0	2	<2.0	2.00	<1.0
25	<2.0	2	<2.0	2.00	<1.0

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March 2002

Date	Total coliform	Seven Sample Median - Total	Fecal Coliform	Geometric Mean of Last 5 Samples - Fecal	Enterococcus
1	<2.0	2	<2.0	2.00	<1.0
4	2	2	<2.0	2.00	<1.0
5	<2.0	2	<2.0	2.00	<1.0
6	<2.0	2	<2.0	2.00	<1.0
7	<2.0	2	<2.0	2.00	<1.0
8	<2.0	2	<2.0	2.00	<1.0
11	2	2	<2.0	2.00	<1.0
12	<2.0	2	<2.0	2.00	<1.0
13	<2.0	2	<2.0	2.00	<1.0
14	<2.0	2	<2.0	2.00	<1.0
15	<2.0	2	<2.0	2.00	<1.0
18	2	2	<2.0	2.00	<1.0
19	5	2	<2.0	2.00	<1.0
20	<2.0	2	<2.0	2.00	<1.0
21	<2.0	2	<2.0	2.00	<1.0
22	<2.0	2	<2.0	2.00	<1.0
25	<2.0	2	<2.0	2.00	<1.0
26	2	2	<2.0	2.00	<1.0
27	<2.0	2	<2.0	2.00	<1.0
28	<2.0	2	<2.0	2.00	<1.0
29	<2.0	2	<2.0	2.00	<1.0
30					
31					

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April 2002

Date	Total coliform	Seven Sample Median - Total	Fecal Coliform	Geometric Mean of Last 5 Samples - Fecal	Enterococcus
1	<2.0	2	<2.0	2.00	<1.0
2	<2.0	2	<2.0	2.00	<1.0
3	<2.0	2	<2.0	2.00	<1.0
4	<2.0	2	<2.0	2.00	<1.0
5	<2.0	2	<2.0	2.00	<1.0
6					
7					
8	<2.0	2	<2.0	2.00	<1.0
9	<2.0	2	<2.0	2.00	<1.0
10	<2.0	2	<2.0	2.00	<1.0
11	<2.0	2	<2.0	2.00	<1.0
12	<2.0	2	<2.0	2.00	<1.0
15	<2.0	2	<2.0	2.00	<1.0
16	<2.0	2	<2.0	2.00	<1.0
17	330	2	60	3.95	<1.0
18	<2.0	2	<2.0	3.95	<1.0
19	<2.0	2	<2.0	3.95	<1.0
22	<2.0	2	<2.0	3.95	<1.0
23	<2.0	2	<2.0	3.95	<1.0
24	<2.0	2	<2.0	2.00	<1.0
25	<2.0	2	<2.0	2.00	<1.0
26	<2.0	2	<2.0	2.00	<1.0
29	2	2	<2.0	2.00	<1.0
30	<2.0	2	<2.0	2.00	1

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May 2002

Date	Total coliform	Seven Sample Median - Total	Fecal Coliform	Geometric Mean of Last 5 Samples - Fecal	Enterococcus
1	<2	2	<2	2.00	<1
2	<2	2	<2	2.00	<1
3	<2	2	<2	2.00	<1
4					
5					
6	7	2	<2	2	11
7	<2	2	<2	2	<1
8	<2	2	<2	2	<1
9	<2	2	<2	2	<1
10	<2	2	<2	2	<1
11					
12					
13	17	2	4	2.30	4
14	23	2	5	2.76	7
15	<2	2	<2	2.76	<1
16	<2	2	<2	2.76	<1
17	<2	2	<2	2.76	<1
18					
19					
20	2	2	<2	2.76	<1
21	33	2	<2	2.00	<1
22	<2	2	<2	2.00	1
23	<2	2	<2	2.00	<1
24	<2	2	<2	2.00	<1
25					
26					
27	8	2	<2	2.00	<1
28	2	2	<2	2.00	<1
29	<2	2	<2	2.00	<1
30	<2	2	<2	2.00	<1
31	<2	2	<2	2.00	<1

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June 2002

Date	Total coliform	Seven Sample Median - Total	Fecal Coliform	Geometric Mean of Last 5 Samples - Fecal	Enterococcus
1					
2					
3	<2	2	<2	2.00	<1
4	<2	2	<2	2.00	<1
5	2	2	<2	2.00	<1
6	17	2	8	2.64	2
7	<2	2	<2	2.64	<1
8					
9					
10	2	2	2	2.64	<1
11	<2	2	<2	2.64	<1
12	<2	2	<2	2.64	<1
13	<2	2	<2	2.00	<1
14	<2	2	<2	2.00	<1
15					
16					
17	130	2	33	3.50	47
18	11	2	<2	3.50	2
19	<2	2	<2	3.50	<1
20	<2	2	<2	3.50	<1
21	<2	2	<2	3.50	<1
22					
23					
24	<2	2	<2	2.00	<1
25	<2	2	<2	2.00	<1
26	<2	2	<2	2.00	<1
27	<2	2	<2	2.00	<1
28	13	2	<2	2.00	<1

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July 2002

Date	Total coliform	Seven Sample Median - Total	Fecal Coliform	Geometric Mean of Last 5 Samples - Fecal	Enterococcus
1	<2	2	<2	2.00	<1.0
2	23	2	5	2.40	1.33
3	<2	2	<2	2.40	<1.0
4	<2	2	<2	2.40	<1.0
5	<2	2	<2	2.40	<1.0
6					
7					
8	<2	2	<2	2.40	<1.0
9	13	2	<2	2.00	<1.0
10	<2	2	<2	2.00	<1.0
11	<2	2	<2	2.00	<1.0
12	<2	2	<2	2.00	<1.0
13					
14					
15	<2	2	<2	2.00	<1.0
16	<2	2	<2	2.00	<1.0
17	<2	2	<2	2.00	<1.0
18	<2	2	<2	2.00	<1.0
19	<2	2	<2	2.00	<1.0
20					
21					
22	<2	2	<2	2.00	<1.0
23	<2	2	<2	2.00	<1.0
24	<2	2	<2	2.00	<1.0
25	<2	2	<2	2.00	<1.0
26	50	2	<2	2.00	<1.0